BASIC MATHS VOCABULARY. ARITHMETIC 1º ESO

Definiciones extraídas de la página web: http://www.mathsisfun.com/definitions/index.html

BLOQUE ARITMÉTICA - ARITHMETIC

UNIDAD DIDÁCTICA 1: LOS NÚMEROS NATURALES. WHOLE NUMBERS

Natural Numbers	Counting numbers from one to infinity.	1, 2, 3, ...
Whole Numbers	Counting numbers from zero to infinity.	0, 1, 2, 3, ...
Integers	Positive and negative numbers and zero.	... -3, -2, -1, 0, 1, 2, 3, ...
Rationals	Integers, fractions, terminating and repeating decimals.	... -3, -2, -1, 0, 1, 2, 3, ... $\frac{1}{4}$, 0.5 $\frac{1}{7}$, 0.142857142857
Irrationals	Non-terminating and non-repeating decimals.	3.14159265359... $\pi, \sqrt{2}, \sqrt{3}$

=	is equal to, equals
≠	is not equal to
≈	is approximately equal to
≅	is congruent to (same size and shape)
<	less than
>	greater than
≤	less than or equal to
≥	greater than or equal to

NUMBER	CARDINAL	ORDINAL	NUMBER	CARDINAL	ORDINAL
1	One	First	22	Twenty-two	Twenty-second
2	Two	Second	23	Twenty-three	Twenty-third
3	Three	Third	24	Twenty-four	Twenty-fourth
4	Four	Fourth	25	Twenty-five	Twenty-fifth
5	Five	fifth	26	Twenty-six	Twenty-sixth
6	Six	Sixth	27	Twenty-seven	Twenty-seventh
7	Seven	Seventh	28	Twenty-eight	Twenty-eighth
8	Eight	Eighth	29	Twenty-nine	Twenty-ninth
9	Nine	Ninth	30	Thirty	Thirtieth
10	Ten	Tenth	40	Fourty	Fourtieth
11	Eleven	Eleventh	50	Fifty	Fiftieth
12	Twelve	Twelfth	60	Sixty	Sixtieth
13	Thirteen	thirteenth	70	Seventy	Seventieth
14	Fourteen	fourteenth	80	Eighty	Eightieth
15	Fifteen	Fifteenth	90	Ninety	Ninetieth
16	Sixteen	Sixteenth	100	One hundred	Hundredth
17	Seventeen	Seventeenth	1,000	One thousand	Thousandth
18	Eighteen	Eighteenth	10,000	Ten thousand	Ten thousandth
19	Nineteen	Nineteenth	100,000	One hundred thousand	Hundred thousandth
20	Twenty	Twentieth	1,000,000	One million	millionth
21	Twenty-one	Twenty-first			

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Unidades de millón	Centenas De mil	Decenas de mil	Unidades de mil	Centenas	Decenas	Unidades
7	5	3	0	2	1	6

7, 530,216 Seven million, five hundred and thirty thousand, two hundred and sixteen.

SUMA	ADDITION	RESTA	SUBTRACTION
+	**Plus** (Signo)	-	**Minus** (Signo)
Sumar	**To Add** (Verbo)	Restar	**To Subtract** (Verbo)
La suma	**The Sum** (El resultado)	La diferencia	**The difference** (El resultado)
MULTIPLICACIÓN	**MULTIPLICATION**	**DIVISIÓN**	**DIVISION**
x	**Times** (Signo)	/	**Divided by** (Signo)
Multiplicar	**To Multiply** (Verbo)	Dividir	**To Divide** (Verbo)
El producto	**The Product** (El resultado)	**Dividend** **Remainder**	**Divisor** **Quotient**

- **Digit** -- Cifra, dígito
- **Even numbers –** Números pares.
- **Is smaller than –** es más pequeño que
- **Is bigger than –** es más grande que

Odd numbers – Números impares
The smallest – El más pequeño
The biggest -- El más grande.

( )	brackets (called parentheses in text)	$ $	dollar, dollars
{ }	braces	c ¢	cent, cents
[ ]	brackets (or square brackets)	£	pound, pounds
.	decimal point	€	Euros

PEMDAS
1. **P**arentheses ( ) or {} or [ ]
2. **E**xponents (orders, powers)
3. **M**ultiplication (times)
4. **D**ivision (divided by)
5. **A**ddition (plus)
6. **S**ubtraction (minus)

Please
Excuse
My
Dear
Aunt
Sally

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BLOQUE ARITMÉTICA - ARITHMETIC

UNIDAD DIDÁCTICA 2: DIVISIBILIDAD. DIVISIBILITY

MÚLTIPLOS - MULTIPLES

The products of a number with the natural numbers: 1, 2, 3, 4, … are called the multiples of the number.

- The multiples of 7 are: 7, 14, 21, …
- 7, 14, 21, …. Are multiples of 7.
- 7 is god's number and its multiples are …

- Write down the first ten multiples of …
  Anota los diez primeros múltiplos de …
- write down the three smallest multiples of 8 which are over 50
  Anota los tres múltiplos de 8 más pequeños que superen 50.
- Obtain some multiples of …
  Obtener algunos múltiplos de …
- Find three multiples of 11 between 10 and 30
  Busca tres múltiplos de 11 entre 10 y 30.
- Find out if 24 is a multiple of 2.
  Descubre si 24 es un múltiplo de 2.

DIVISORES – FACTORS (divisors)

A whole number that divides exactly into another whole number is called a factor of that number.

- The factors of 7 are: 1, 7
- 1, 7 are factors of 7.
- 7 is god's number and its factors are …

- List all the factors of …
  Haz una lista de todos los divisores de …
- Work out all the factors of …
  Calcula todos los divisores de …
- Point out which of these numbers have exactly three factors
  Señala cuáles de los siguientes números tienen exactamente tres divisores.

Euclid –/iuclid/ Euclides

The sieve of Eratosthenes – La criba de …

To factor – Factorizar

Factor tree – Arbol de factorización.

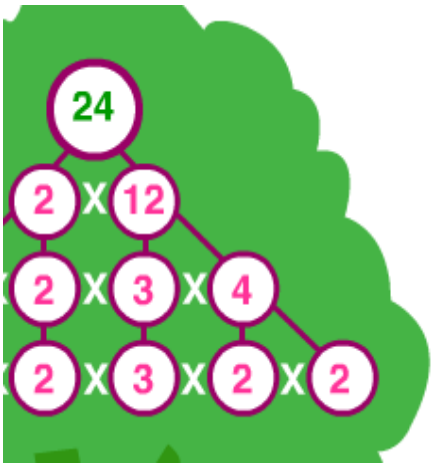
Definiciones extraídas de la página web: http://www.mathsisfun.com/definitions/index.html

handy divisibility rules

divisible - can be divided without a remainder.

A number can be divided ...

by	if	
2	the last digit is divisible by 2	8724 4 ÷ 2 = 2
3	the sum of its digits is divisible by 3	8724 21 ÷ 3 = 7 8+7+2+4=21
4	the number made by the last two digits is divisible by 4	8724 24 ÷ 4 = 6
5	the last digit is zero or 5	8725
6	the number is divisible by 2 and by 3	8724 4 ÷ 2 = 2 8+7+2+4=21 21÷3=7
8	the number made by the last three digits is divisible by 8	8720 720 ÷ 8 = 90
9	the sum of its digits is divisible by 9	8721 18 ÷ 9 = 2 8+7+2+1=18
10	the last digit is 0	8720

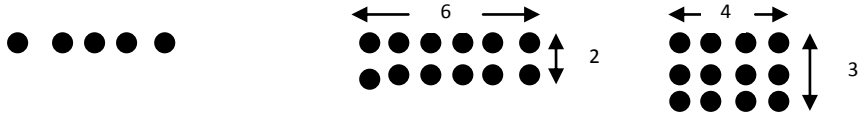


PRIMO – PRIME / COMPOSITE - COMPUESTO

PRIME: number that has exactly two factors 1 and itself.

COMPOSITE NUMBER: number that has more than two factors.

- The number 5 is prime, because it has exactly two factors 1 and 5.
- 12 is a composite number, because it has more than two factors.



- List all the factors of …
  Haz una lista de todos los divisores de …
- Work out all the factors of …
  Calcula todos los divisores de …
- Point out which of these numbers have exactly three factors
  Señala cuáles de los siguientes números tienen exactamente tres divisores.

M.C.D - GREATEST COMMON FACTOR (G.C.F.)

The highest (greatest) common factor of several numbers is the largest number that evenly divides into all of them.

- 4 is the greatest common factor to 16, 24 and 36.
- **To find GCF**
  - **Find the prime factor descomposition**
  - **Choose only the common factor with the least exponents (orders)**

m.c.m. – LEAST COMMON MULTIPLE (L.C.M.)

The least common multiple of several numbers is the smallest number that is multiple of all of them.

- The least common factor of 4 and 3 is 12.
- **To find LCM**
  - **Find the prime factor descomposition.**
  - **Choose the common factor and the not common factor with the greatest exponents**

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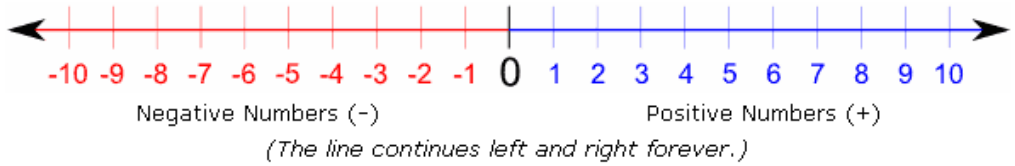
BLOQUE ARITMÉTICA - ARITHMETIC

UNIDAD DIDÁCTICA 3: ENTEROS. INTEGERS.

RECTA NUMÉRICA – NUMBER LINE



8 is **greater (bigger) than** -2 8 > 2 - 4 is **smaller (less) than** - 2 - 4 < - 2

- I have zero in the center, the positive numbers go to the right, and the negative numbers go to the left.

- We can order the integers from **least to greatest** by using a number line.
  Podemos ordenar los enteros de menor a mayor usando una recta numérica.
- I have the **tick marks** by increments or intervals of 5.
  Tomo las marcas con incrementos o intervalos de 5 (unidades)
- **To be right here**. – The number 6 is going to be right about here.
  Estar aquí. (situar en la recta numérica). – El nº 6 va a estar por aquí.
- - 6 **is to the left** of negative 5.
  - 6 está a la izquierda del - 5.
- Sort these negative numbers, greatest first.
  Ordena estos números negativos, el más grande primero. (de mayor a menor)
- Plot on the number line and after order them from less to great: 5, - 2, 0, - 5, 7.
  Dibuja en la recta numérica y después ordenalos de menos a más. …

VALOR ABSOLUTO – ABSOLUTE VALUE

The absolute value of a number is <u>the distance</u> between the number and zero. It's represented by these 2 bars | |.

- The absolute value of – 5 is 5. |- 5| = 5
- "- 7" is 7 away from zero.

THE OPPOSITE – EL OPUESTO

The opposite of an integer is another integer with the same absolute value but different sign.

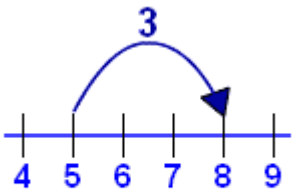
- The opposite of – 5 is 5.

Large - Grande longitud **Great –** Grande cantidad **Big –** Grande tamaño.

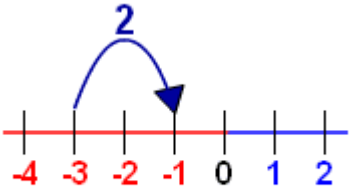
Definiciones extraídas de la página web: http://www.mathsisfun.com/definitions/index.html

SUMANDO Nº POSITIVOS – ADDING POSITIVE NUMBERS

Para sumar un positivo nos desplazamos a la derecha.



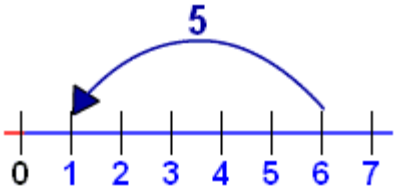
5 + 3 = 8



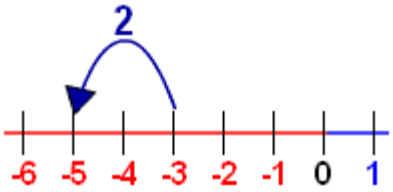
-3 + 2 = -1

SUMANDO Nº NEGATIVOS – ADDING NEGATIVE NUMBERS

Para sumar un negativo nos desplazamos a la izquierda.



6 - 5 = 1



-3 - 2 = -5

- When adding integers with the same sign…
  … We add their absolute values, and give the result the same sign
  Enteros con el mismo signo sumamos sus valores absolutos y el mismo signo.
- When adding integers with the opposite signs …
  … We subtract the smallest from the largest and give the result the sign the sign of the integer with the largest absolute value.
  Distinto signo se resta y se coloca el signo del mayor.

MULTIPLICANDO ENTEROS - MULTIPLYING INTEGERS

		Example
+ × +	two positives you get a positive:	3 × 2 = 6
− × +	a positive and a negative you get a negative:	(-3) × 2 = -6
+ × −	a negative and a positive you get a negative:	3 × (-2) = -6
− × −	two negatives you get a positive:	(-3) × (-2) = 6

Two like signs become a positive sign, two unlike signs become a negative sign

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BLOQUE ARITMÉTICA - ARITHMETIC

UNIDAD DIDÁCTICA 4: FRACCIONES. FRACTIONS.

FRACCIÓN – FRACTION

FRACTION BAR → $\frac{2}{3}$

The top number of the fraction tells us how many slices we have. We call it the **numerator**.

The bottom number tells us how many parts in the whole pizza. We call it the **denominator**.

fraction	word	plural
$\frac{1}{2}$	One half (A half)	halves
$\frac{1}{3}$	One third	thirds
$\frac{1}{4}$	One quarter	quarters
$\frac{1}{5}$	One fifth	fifths
$\frac{1}{6}$	One sixth	sixths
$\frac{1}{7}$	One seventh	sevenths
$\frac{1}{8}$	One eighth	eighths
$\frac{1}{9}$	One ninth	ninths
$\frac{1}{10}$	One tenth	tenths

words	figures
one quarter	$\frac{1}{4}$
two fifths	$\frac{2}{5}$
four fifths	$\frac{4}{5}$

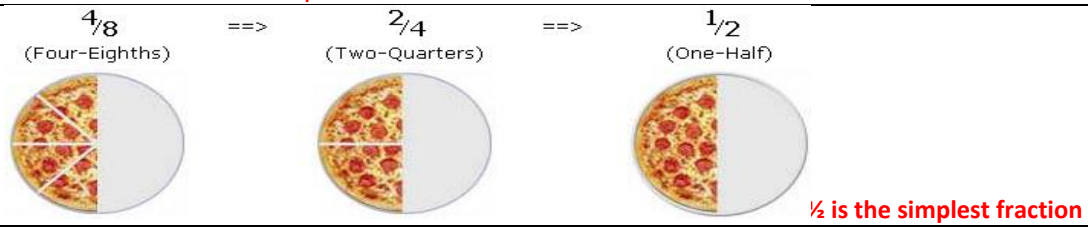
words	figures
three quarters	$\frac{3}{4}$
three eighths	$\frac{3}{8}$
two thirds	$\frac{2}{3}$

FRACCIONES EQUIVALENTES – EQUIVALENT FRACTIONS

If the cross-products are the same, then the fractions are equivalent.

$\frac{}{}$ $\frac{}{}$

the first cross-product is $2 \cdot 15 = 30$. The second cross-product is $5 \cdot 6 = 30$. So, these fractions are equivalent.



SIMPLIFICANDO FRACCIONES – SIMPLIFYING FRACTIONS

If we keep dividing until we can't go any further, then we have **simplified** the fraction (made it as simple as possible).

Definiciones extraídas de la página web: http://www.mathsisfun.com/definitions/index.html

COMPARANDO Y ORDENANDO – COMPARING AND ORDERING

THE SAME DENOMINATORS.

- The largest fraction is the one with largest denominator.

DIFERENT DENOMINATORS.

- If the cross-products are equal, then the fractions are equivalent.
- If the first cross-product is the largest, then the first fraction is the largest.
- If the second cross-product is the largest, then the second fraction is the largest

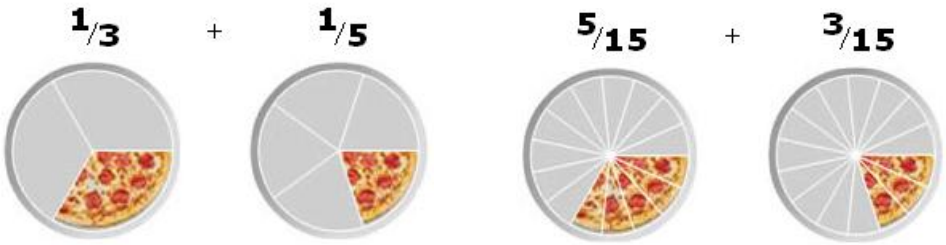
SUMANDO FRACCIONES – ADDING FRACTIONS

THE SAME DENOMINATORS.

- Add only the top numbers (numerators)

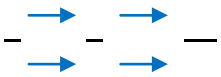
DIFERENT DENOMINATORS.

- Find the LCM of the denominators. It's the new denominator of both fractions.
- We divide every new denominator by the previous one, and we multiply the result by each numerator.



MULTIPLICANDO FRACIONES - MULTIPLYING FRACTIONS

- Multiply the top numbers (the *numerators*).
- Multiply the bottom numbers (the *denominators*).



DIVIDIENDO FRACCIONES - DIVIDING FRACTIONS

- **Multiply the first fraction by the reciprocal of the second fraction.**
- **Multiply the cross-product.**

BLOQUE ARITMÉTICA - ARITHMETIC

UNIDAD DIDÁCTICA 5: LOS NÚMEROS DECIMALES. DECIMAL NUMBERS

Unidades de millón	Centenas De mil	Decenas de mil	Unidades de mil	Centenas	Decenas	Unidades
7	5	3	0	2	1	6

Unidades	Décimas	Centésimas	Milésimas	Diez milésimas	Cien milésimas	Millonésimas
7	5	3	0	2	1	6

La coma decimal se simboliza con el punto.

3.45 Three point four five. Three units, and forty- five hundredths.

El punto nuestro de miles o de millones es una coma.

7, 530,216 Seven million, five hundred and thirty thousand, two hundred and sixteen.

EXPRESIONES. - EXPRESSIONS
The decimal point appears between the ones and the tenths position. El punto decimal aparece entre las unidades y las décimas. We need to place a zero in the thousandths position. Necesitamos colocar un cero en la posición de las milésimas. 0.0934 Nine hundred and thirty – four ten-thousandths. Novecientos treinta y cuatro diez - milésimas. To line up Alinear los decimales en la misma columna. Amount – cantidad. Withdrawn – Retirado (dinero banco) Deposit – Deposito.

Regular number Decimal exacto	**Repeating decimal** Decimal periódico	**Irrational numbers** Números irracionales
2/5 = 0’4 = **0.4**	1/3 = 0’3333… = **0.333…**	π= 3.141592…

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SUMA ADDITION RESTA SUBTRACTION

Line up the decimal points and then follow the rules for adding or subtracting whole numbers, placing the decimal point in the same column.
When one number has more decimal places than another, use zeros to give them the same number of decimal places.
Add: 43.67 + 2.3

1) Line up the decimal points and adds a 0 on the right of the second.
2) Then add.

$$\begin{array}{r} 43.67 \\ 2.30 \\ \hline 45.97 \end{array}$$

MULTIPLICACIÓN MULTIPLICATION

How many digits to leave to the right of the decimal point. Add the number of digits to the right of the decimal point in both factor.

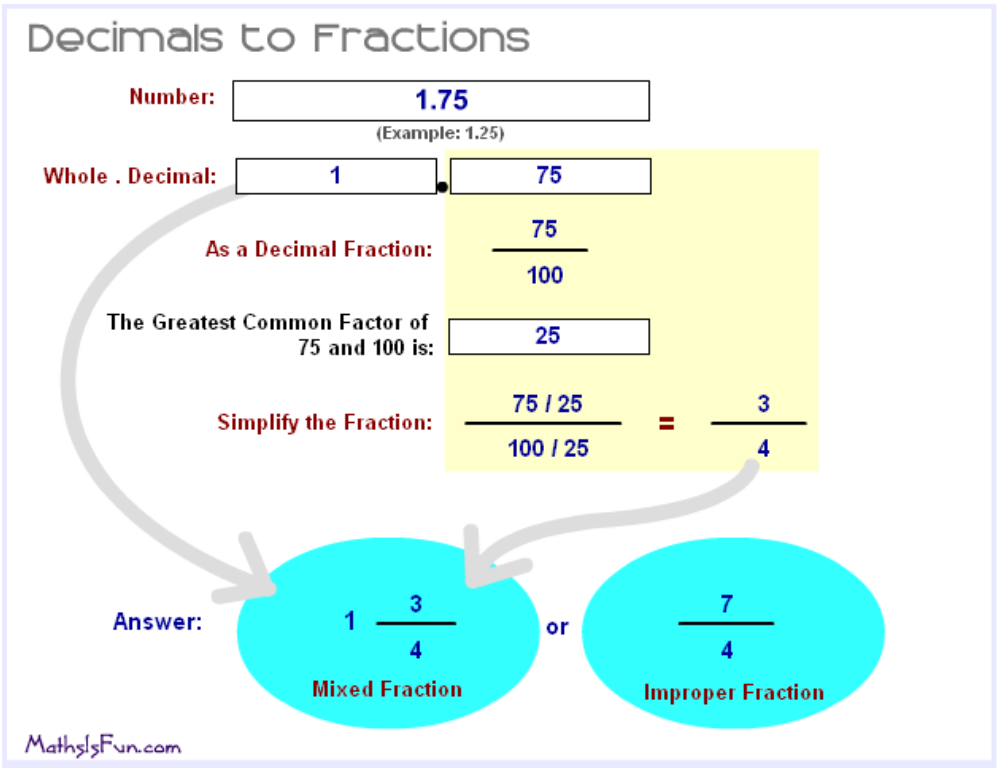
$$\begin{array}{r} 10.2 \\ 2.3 \\ \hline 306 \\ 204\_ \\ \hline 23.46\_ \end{array}$$

DIVISIÓN DIVISION

Continue the whole division adding zeros to the right of the number being divided until you get the amount of decimal digits required.

$$\begin{array}{r|l} 235 & 6 \\ \hline 55 & 39.16 \\ 10 & \\ 40 & \\ 4 & \end{array}$$

FRACTION CONVERTER.



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